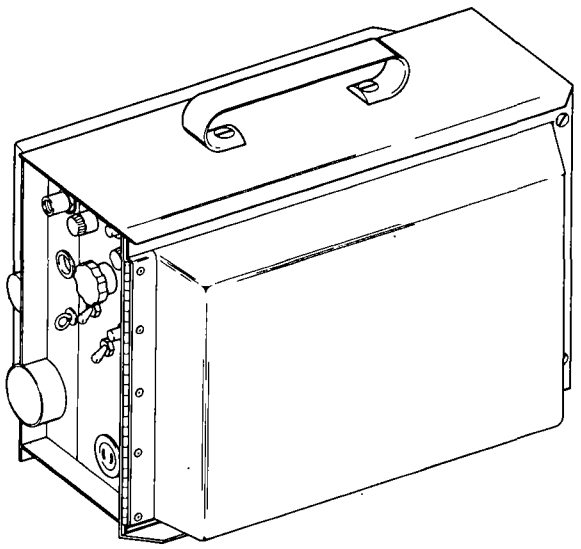
September 1975 FORM: OM-1038

Effective with Serial No. HF875171

MODEL	STOCK NO.
CONTROL/FEEDER	
MILLERMATIC 70A	
.030 WIRE	057 361
.035 WIRE	057 367
.045 WIRE	057 368
MILLERMATIC 80A	
.030 WIRE	058 000
.035 WIRE	058 001
.045 WIRE	058 002



MODEL/STOCK NO.	SERIAL/STYLE NO.	DATE PURCHASED

OWNER'S MANUAL

millerMatic®

MILLER ELECTRIC MFG. CO.

APPLETON, WISCONSIN, USA 54911

ADDITIONAL COPY
PRICE 35 CENTS

NWSA CODE NO. 4579

PRINTED IN U.S.A.

WARRANTY

MILLER Electric Mfg. Co., Appleton, Wisconsin, warrants all new equipment to be free from defects in material and factory workmanship for the periods indicated below, provided the equipment is installed and operated according to manufacturer's instructions.

MILLER Electric Mfg. Co.'s obligation, under this warranty, is limited to replacing or repairing any defective part or correcting any manufacturing defect without charge during the warranty period if MILLER'S inspection confirms the existence of such defects. MILLER'S option of repair or replacement will be f.o.b. factory at Appleton, Wisconsin or f.o.b. a MILLER authorized service facility, and therefore no compensation for transportation costs of any kind will be allowed.

The warranty period, beginning on the date of sale to the original purchaser-user of the equipment, will be as follows:

1.	Arc welders, power sources, and components	–	1 year
2.	Original main power rectifiers	–	3 years (unconditionally)
3.	MHFC-L1 Feeder, MHG-35C1, 20E, 20K, and all guns and torches	–	90 days
4.	All other Millermatic Feeders	–	1 year
5.	Mag-Diesel engine on DEL-200	–	6 months
6.	All other engines	–	1 year

Engine Warranties are covered by the engine manufacturers, subject to their procedures and to be handled through their authorized local Service Stations or agencies. No warranty will be made in respect to trade accessories, such being subject to the warranties of their respective manufacturers.

MILLER Electric Mfg. Co. will not be liable for any loss or consequential damage or expense accruing directly or indirectly from the use of equipment covered in this warranty.

This warranty supersedes all previous MILLER warranties and is exclusive with no other guarantees or warranties expressed or implied.

Turntable Assembly (Stock No. 057 522)

Rotates as the operator changes work positions. Eliminates cable strain and reduces wire feed friction.

Quick Disconnects (Stock No. 057 459)

Permits rapid connection and disconnection of welding cables.

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SECTION 1 - INTRODUCTION

Model	Electrode Wire Dia. Capability	Electrode Wire Feed Speed	Control Circuit Power at Gun	Dimensions (Inches)	Weight (Pounds) Net	Ship
70A	.030"-.045"	50-675 ipm	24 Volts AC	Height- 13-1/4 Width - 11 Depth - 18	27	34
80A				Height- 17-1/2 Width - 13-1/4 Depth - 22-1/4	45.5	51

Figure 1-1. Specifications

1-1. GENERAL

This manual has been prepared especially for use in familiarizing personnel with the design, installation, operation, maintenance, and troubleshooting of this equipment. All information presented herein should be given careful consideration to assure optimum performance of this equipment.

1-2. RECEIVING-HANDLING

Prior to installing this equipment, clean all packing material from around the unit and carefully inspect for any damage that may have occurred during shipment. Any claims for loss or damage that may have occurred in transit must be filed by the purchaser with the carrier. A copy of the bill of lading and freight bill will be furnished by the carrier on request if occasion to file claim arises.

When requesting information concerning this equipment, it is essential that Model Description and/or Stock Number and Serial (or Style) Numbers of the equipment be supplied.

1-3. DESCRIPTION

This control/feeder is of the constant wire feed speed type and is designed to be used in conjunction with a constant potential welding power source.

1-4. SAFETY

The following definitions apply to CAUTION, IMPORTANT, and NOTE blocks found throughout this manual:

CAUTION

Under this heading, installation, operating, and maintenance procedures or practices will be found that if not carefully followed may create a safety hazard to personnel.

IMPORTANT

Under this heading, installation, operating, and maintenance procedures or practices will be found that if not carefully followed may result in damage to equipment.

NOTE

Under this heading, explanatory statements will be found that need special emphasis to obtain the most efficient operation of the equipment.

SECTION 2 - INSTALLATION

2 - 1. LOCATION (Figure 2-1)

Legend	Dimensions (Inches) 70A Model	80A Model
A	1-1/2	1-3/4
B	11-3/4	15-3/4
C	18	22-3/16
D	11	13-9/16

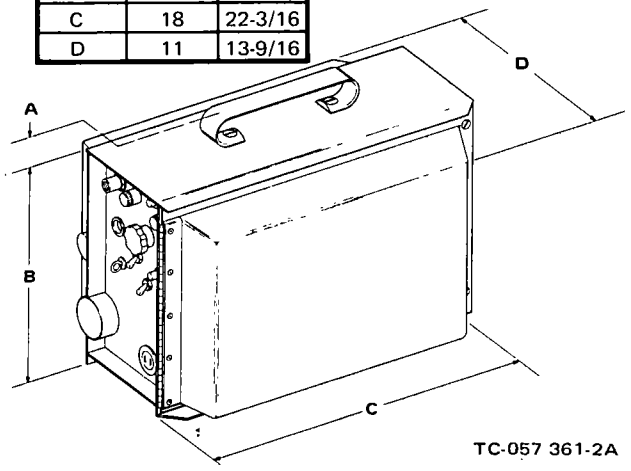


Figure 2-1. Control/Feeder Dimensions

Refer to Figure 2-1 for dimensional information on the control/feeder. Lead lengths must be considered when installing the control/feeder. If the welding power source can be located near the work area, the control/feeder can usually be installed on top of the welding power source. However, due to the portability of this unit, the unit may be located wherever desired. Suitable space should be allowed for making necessary connections.

2 - 2. SWIVEL CARRYING HANDLE (80A Models Only) (Figure 2-2)

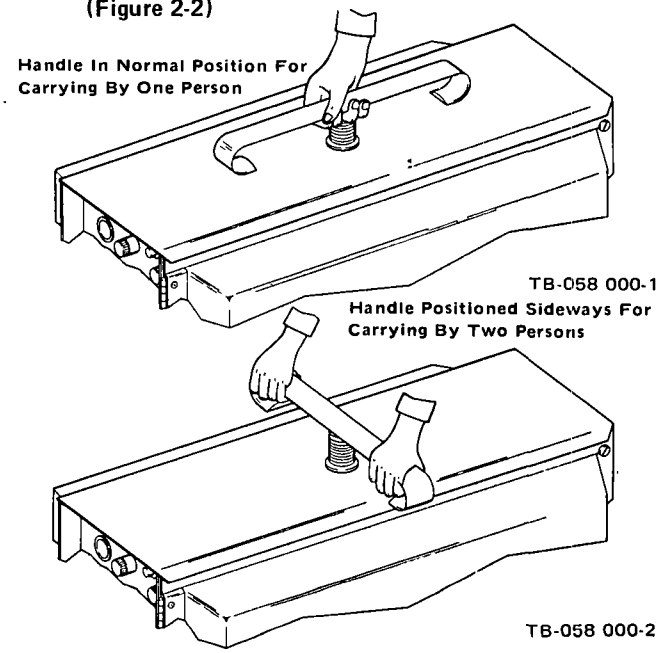

Handle In Normal Position For Carrying By One Person
TB-058 000-1
Handle Positioned Sideways For Carrying By Two Persons
TB-058 000-2

Figure 2-2. 80A Model Carrying Handle

The carrying handle on the 80A model may be rotated to facilitate two-person carrying. Figure 2-2 illustrates this usage.

2 - 3. 115 VOLTS AC CONNECTIONS (Figures 2-3 & 2-4)

Attach one end of the 115 volts power cable to the supplied 3 prong female plug as shown in Figure 2-3. It is recommended that a 16/3 conductor cable be used as the 115 volts power cable. After attachment of the 115 volts plug to the 115 volts power cable is complete, insert the 115 volts plug fully into the 115 VOLTS AC Receptacle on the rear panel of the control/feeder and rotate the 115 volts plug as far as it will turn in a clockwise direction. This rotating action will lock the plug in the receptacle and prevent the plug from pulling out should tension be applied to the 115 volts power cable. Connect the remaining end of the 115 volts power cable to a 115 volts ac 60 Hertz power supply.

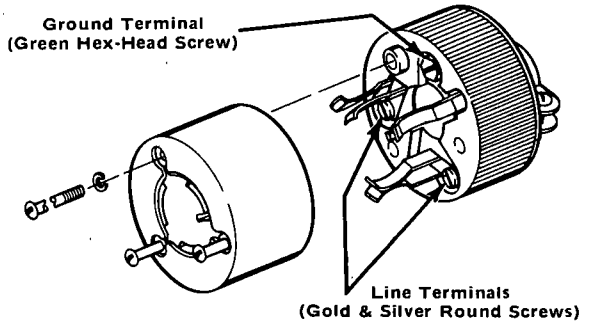


Figure 2-3. 115 Volts AC Plug Installation

2 - 4. CONTACTOR CONTROL CONNECTIONS (Figure 2-4)

Attach one end of the contactor control cable to the supplied 2 prong male plug. It is recommended that a 16/2 conductor cable be used for the contactor control cable. After attachment of the contactor control plug to the contactor control cable is complete, insert the contactor control plug fully into the Contactor Control Receptacle on the rear panel of the control/feeder and rotate the contactor control plug as far as it will turn in a clockwise direction. This rotating action will lock the plug in the receptacle and prevent the plug from pulling out should tension be applied to the contactor control cable. Attach the remaining end of the contactor control cable to the contactor control connection point on the welding power source.

2 - 5. SHIELDING GAS CONNECTIONS (Figures 2-4 & 3-1)

Determine the distance the control/feeder is to be located from the welding power source and then connect a hose from the shielding gas regulator-flowmeter on the shielding gas supply to the gas input connection on the rear of the control/feeder. Refer to Figure 2-4 for gas input connections. This connection has a right-hand thread.

The shielding gas hose which comes from the gun is to be attached to the output shielding gas connector, labeled GAS, on the front panel of the control/feeder. Refer to Figure 3-1 for gas output connections. This connector has right-hand threading.

2 - 6. SWITCH CONTROL CONNECTIONS (Figure 3-1)

A two-pole twistlock receptacle is provided on the front panel of the control/feeder for making switch control connections. When the switch connected across this receptacle is closed, the contactor in the welding power source will energize, shielding gas will flow, and wire will begin to feed.

2 - 7. WELD CABLE TERMINAL AND ACCESS HOLE (Figures 2-4 & 3-1)

A terminal is provided behind the left access door of the control/feeder to serve as a junction point for joining together the weld cables from the welding power source and the gun. Insert the weld cable from the welding power source through the access hole in the rear of the control/ feeder and connect the weld cable to the weld cable terminal. Insert the weld cable from the gun through the access hole in the front of the control/ feeder and connect the weld cable to the weld cable terminal. Refer to Figures 2-4 and 3-1, respectively, for rear and front weld cable access holes.

IMPORTANT

Ensure that the weld cable terminal is kept clean at all times. Also ensure that the nut on this terminal is secure. If either one of the above conditions is not met, erratic weld current could result.

2 - 8. WIRE GUIDE & DRIVE ROLL GEAR INSTALLATION (Figure 2-5)

Upon initial installation, or as a result of wire size changes, it is necessary to install the required drive rolls and wire guides to accommodate the particular wire size. Having selected the desired wire size and related parts, proceed to the following installation instructions:

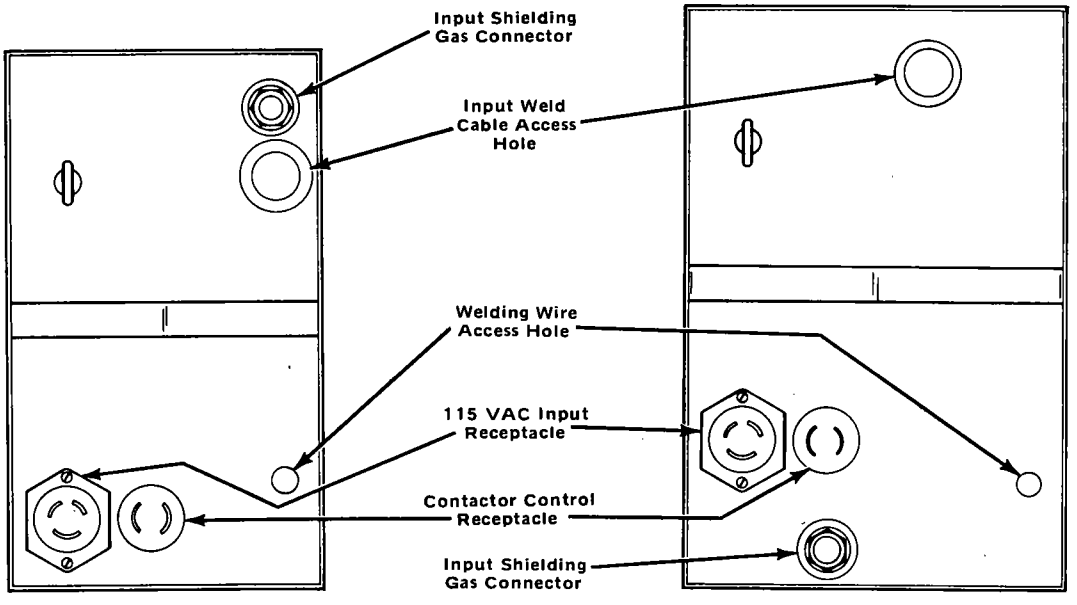


Figure 2-4. Rear Panel Views

1. Loosen pressure adjustment wing nut (item 11, Figure 2-5) and pull downward. Lift gear cover (2) up until it is in an upright position.

2. Using a 1/8 inch allen wrench, remove shoulder screw (3) and then pull out drive roll gear (1).

3. Insert replacement drive roll gear (1) into gear cover (2) and secure in place with shoulder screw (3).

4. Remove nylon hex-nut (6) and drive roll gear (7) from drive shaft (8).

5. Install replacement lower drive roll gear (7) onto drive shaft (8) and secure in place with nylon hex-nut (6).

6. Loosen securing screw (9) and pull out inlet guide (10).

7. Install replacement inlet guide (10) in drive roll assembly and secure with securing screw (9).

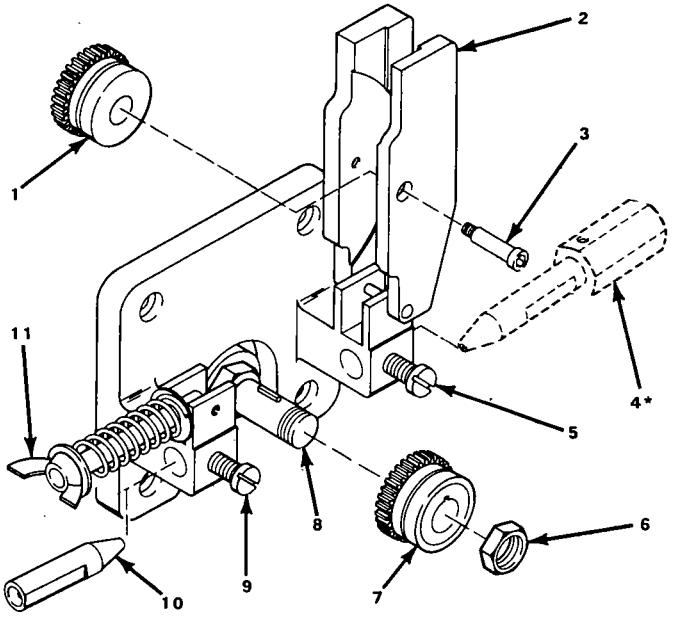
IMPORTANT

Ensure that the inlet guide (10) is given approximately 1/16 inch of clearance from the drive roll gears (1 & 7) and that the flat side of the inlet guide (10) is facing screw (5).

8. Loosen securing screw (5) and pull out outlet guide (4). Insert proper size outlet guide (4) into drive roll assembly and secure with securing screw (5).

IMPORTANT

Ensure that outlet guide (4) clears the drive roll gears (1 & 7) by 1/16 inch and that the flat side of the outlet guide (4) is facing screw (9).



*Shipped With Gun

TB-057 361-4

Figure 2-5. Wire Guide & Drive Roll Installation

2-9. EIGHT INCH SPOOL TYPE WELDING WIRE INSTALLATION (70A Models Only) (Figure 2-6)

1. Remove the spool retaining spring (item 6, Figure 2-6).

2. Slide the spool of wire onto the hub (7) so that the wire will pay off from the bottom of the spool in a counterclockwise direction.

3. Rotate the spool until the guide hole in it aligns with the guide pin on the hub (7). Slide the spool onto the hub (7) until it seats against the back side of the hub (7).

4. Place the spool retaining spring (6) on the hub (7) making sure that it seats tightly against the wire spool.

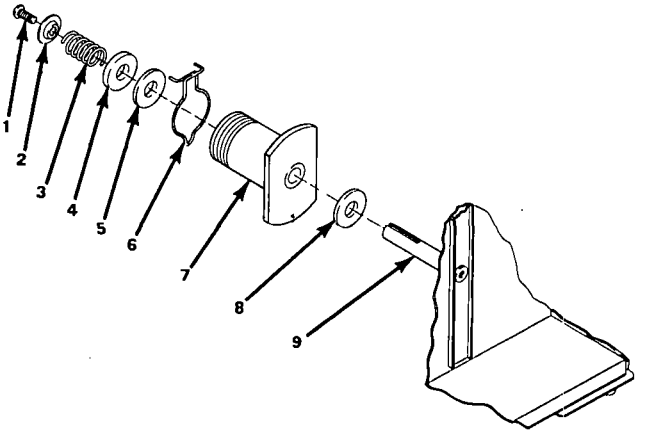
2-10. FOUR INCH SPOOL TYPE WELDING WIRE INSTALLATION (70A Models Only) (Figure 2-6)

1. Remove bolt (item 1, Figure 2-6) from spool support shaft (9).

2. Pull off washer (2), spring (3), collar assembly (4), fiber washer (5) and hub (7) from the spool support shaft (9).

NOTE

Ensure that the fiber washer (8) is left on the spool support shaft (9).



TB-057 361-5

Figure 2-6. Installation of Welding Wire Spool

3. Place a four inch spool of welding wire onto the spool support shaft (9) so that the wire will pay off from the bottom of the spool in a counterclockwise direction.

4. Install fiber washer (5), collar assembly (4), and spring (3) onto the spool support shaft (9).

5. Place washer (2) onto bolt (1) and turn bolt (1) into spool support shaft (9) until a significant pressure is felt.

6. Place the hub (7) and spool retaining spring (6) in a convenient place.

2-11. INSTALLATION OF WELDING WIRE EIGHT INCH & TWELVE INCH SPOOL (80A Models Only)

1. Slide the spool of wire onto the spindle assembly so that the wire will pay off from the bottom of the spool in a counterclockwise direction.

2. Rotate the spool until the hole in the spool aligns with the pin in the spindle assembly. Slide the spool onto the spindle assembly until it seats against the back flange of the spindle.

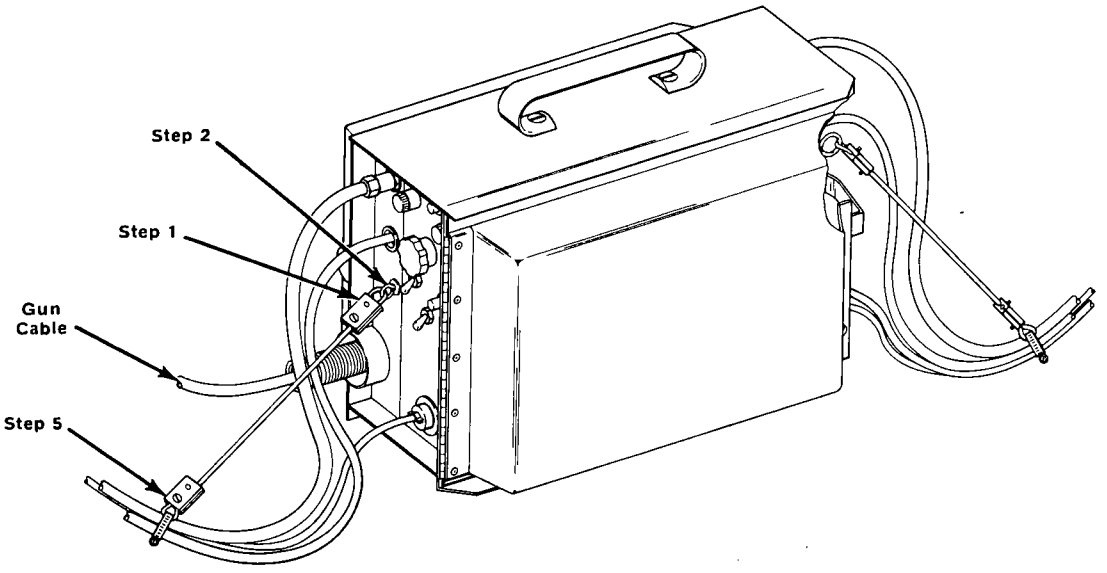
3. For eight inch spools only: Slide the supplied spring, stored beside the spindle assembly, onto the spindle assembly.

4. Depress the two spring loaded stops on the retaining ring and slide the retaining ring onto the spindle. When retaining ring is in position, release the two stops.

2-12. HUB TENSION ADJUSTMENT

For 70A Models Only: Rotate the adjustment screw (item 1, Figure 2-6) only until a slight drag is felt while turning spindle.

For 80A Models Only: Rotate the hex nut, located on the end of the spindle support shaft, only until a slight drag is felt while turning spindle.



TC-057 361-6A

Figure 2-7. Strain Relief Installation

2-13. STRAIN RELIEF INSTALLATION (Figure 2-7)

NOTE

The following steps apply for both the front and rear strain reliefs. The only difference being that the rear gas and weld cables should not be run underneath the handle on the rear of the control/feeder.

1. Loosen the two screws which secure the strain relief cable in the clamp. Ensure that the two screws loosened are on the end of the cable that does not have the hose clamp run through it.
2. Pull out the short end of strain relief cable and loop it through the eyelet on the control/feeder.
3. Insert the cable back into the clamp and secure the two screws.
4. Loosen the hose clamp until it comes apart.
5. Group all cables together (except the gun cable), pull the strain relief tight and secure the cables with the hose clamp.

IMPORTANT

Ensure that some slack is left in the cables between the clamp and the feeder. Also do not tighten the hose clamp too securely as this may cut off gas flow.

2-14. WELDING WIRE THREADING

NOTE

If an external welding wire supply is used, remove the welding wire access hole plug and insert the welding wire through the welding wire access hole. Refer to Figure 2-4 for welding wire access hole location.

1. Loosen the wing nut on the drive roll pressure adjustment, pivot the drive roll pressure adjustment downward, and lift the pressure gear assembly upward until it is in an upright position.
2. Cut off any portion of the free end of the welding wire which is not straight. Feed the welding wire through the inlet wire guide in the drive roll assembly.
3. Continue to feed the welding wire through the outlet wire guide.
4. Pivot the pressure gear assembly downward making sure the teeth on the upper gear mesh with lower drive gear. The welding wire must also be in the grooves of the upper and lower drive rolls.
5. Pivot the drive roll pressure adjustment upward into the slot on the pressure gear assembly making sure the lower flat washer is above the pressure gear casing.
6. Turn the wing nut on the drive roll pressure adjustment in a clockwise direction until the drive rolls are tight against the welding wire. Do not overtighten. Further adjustment can be made after the welding power source and control/feeder are put into operation.
7. Connect the gun to the control/feeder according to the instructions in the Gun Instruction Manual.
8. Energize the welding power source.
9. Place the control/feeder Power Switch in the ON position.
10. Depress the INCH switch. This will run the welding wire through the gun without placing weld current on the welding wire. Release the INCH switch after the end of the welding wire is approximately one inch from the end of the gun tip.

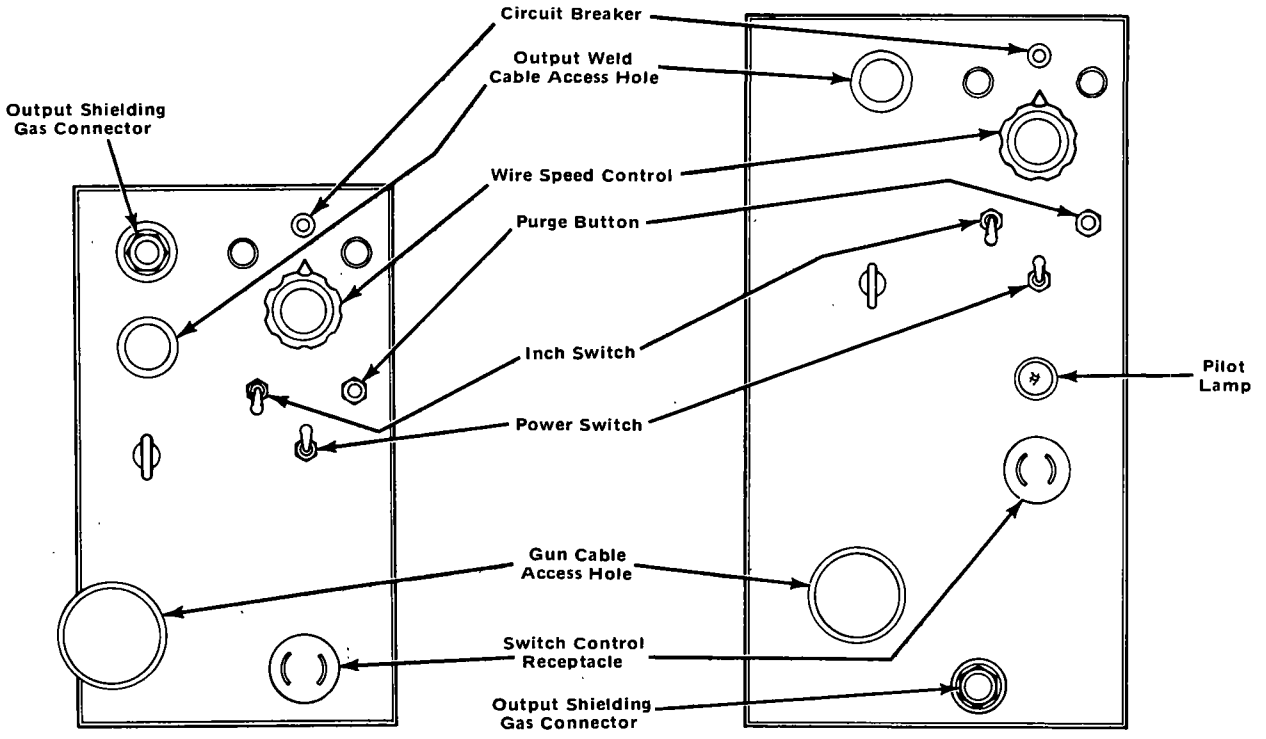
SECTION 3 - FUNCTION OF CONTROLS

3 - 1. POWER SWITCH (Figure 3-1)

Placing the Power Switch on the control/feeder in the On position will apply 115 volts ac to the unit and thereby place it in an operational condition, ready to feed wire and permit shielding gas to flow. Placing the Power Switch in the Off position will shut the control/feeder down.

CAUTION

Even though the Power Switch is in the Off position and the unit is apparently shutdown, 115 volts will still be present at the input terminals of the Power Switch for as long as the 115 volts cable is connected to its activated source.



70A Model TB-004 526 80A Model TB-004 452

Figure 3-1. Front Panel Views

3 - 2. WIRE SPEED CONTROL (Figure 3-1)

The WIRE SPEED Control provides a means of determining the rate at which welding wire will be fed into the weld. Rotating the WIRE SPEED Control in a clockwise direction will increase the rate of the wire feed. When the WIRE SPEED Control is set at 0, wire will feed at a rate of 50 IPM, when set at 100, the wire will feed at a rate of 675 IPM.

3 - 3. PURGE BUTTON (Figure 3-1)

The PURGE Button, located on the front panel of the control/feeder, is a momentary contact switch. This switch will energize the gas solenoid and purge the shielding gas line of the gun. The PURGE Button also allows the shielding gas regulator to be adjusted without energizing the welding circuit.

3 - 4. INCH SWITCH (Figure 3-1)

The INCH Switch, located on the front panel of the control/feeder, is a spring loaded toggle switch. When actuated it completes the circuit to the motor without having to depress the gun trigger switch. This switch will permit inching of the wire at whatever setting the WIRE SPEED control is at, without energizing the welding circuit or the shielding gas valve.

3 - 5. CIRCUIT BREAKER (Figure 3-1)

A circuit breaker, located on the upper portion of the control/feeder front panel, provides protection to the control/feeder motor. In the event the motor should be placed in an overload condition, the breaker would trip and suspend all output. Should this breaker trip, the RESET Button would have to be manually depressed in order to reset the circuit breaker.

3 - 6. PILOT LAMP (80A Models Only) (Figure 3-1)

The pilot lamp, when illuminated, indicates that the control/feeder is in a ready-to-weld state.

SECTION 4 - SEQUENCE OF OPERATION

4 - 1. GAS METAL-ARC WELDING (GMAW)

1. Make all connections as instructed in Section 2.
2. Rotate the WIRE SPEED Control to the desired setting.
3. Place the Power Switch on the control/feeder in the On position.
4. Depress the PURGE Button for one minute.
5. Energize the welding power source.

CAUTION

Prior to welding, it is imperative that proper protective clothing (welding coat and gloves) and eye protection (glasses and/or welding helmet) be put on. Failure to comply may result in serious or permanent bodily damage.

6. Hold the tip of the gun approximately 1/2 inch from the workpiece.
7. Depress the trigger on the gun handle. Gas will start to flow and wire will start to feed if drive roll pressure is properly adjusted to prevent slippage. If wire slippage is noticed, tighten the drive roll pressure adjustment wing nut 1/2 turn clockwise. Repeat until slippage stops. Do not tighten wing nut too much.

CAUTION

The welding wire and all metal parts in contact with it are energized while welding. Do not touch the welding wire or any metal part making contact with it.

4 - 2. SHUTTING DOWN

1. Turn off the shielding gas at the source.

2. Place the Power Switch on the control/feeder in the Off position and remove the 115 Volts AC plug from the source.

3. Turn off all associated equipment.

CAUTION

If welding is performed in a confined area, failure to turn off the shielding gas supply could result in a buildup of gas fumes, thereby endangering personnel reentering the welding area.

SECTION 5 - MAINTENANCE

5 - 1. INSPECTION AND UPKEEP

Usage and shop conditions will determine the frequency and type of maintenance. Inspect equipment as follows:

1. Make sure welding power source is shut down.
2. Inspect gun for broken areas, cracks and loose parts: tighten, repair, and replace as required.
3. Carefully remove any weld spatter or foreign matter which may accumulate around the nozzle orifice. Use a hardwood stick, never a metal tool.
4. Repair or replace, as required, all hose and cable; give particular attention to frayed and cracked insulation and and areas where it enters equipment.
5. Remove grease and grime from components; moisture from electrical parts and cable.
6. Blow out the gun wire guide liner with compressed air when changing wire. This will remove any metal chips and dirt that may have accumulated.

SECTION 6 - TROUBLESHOOTING

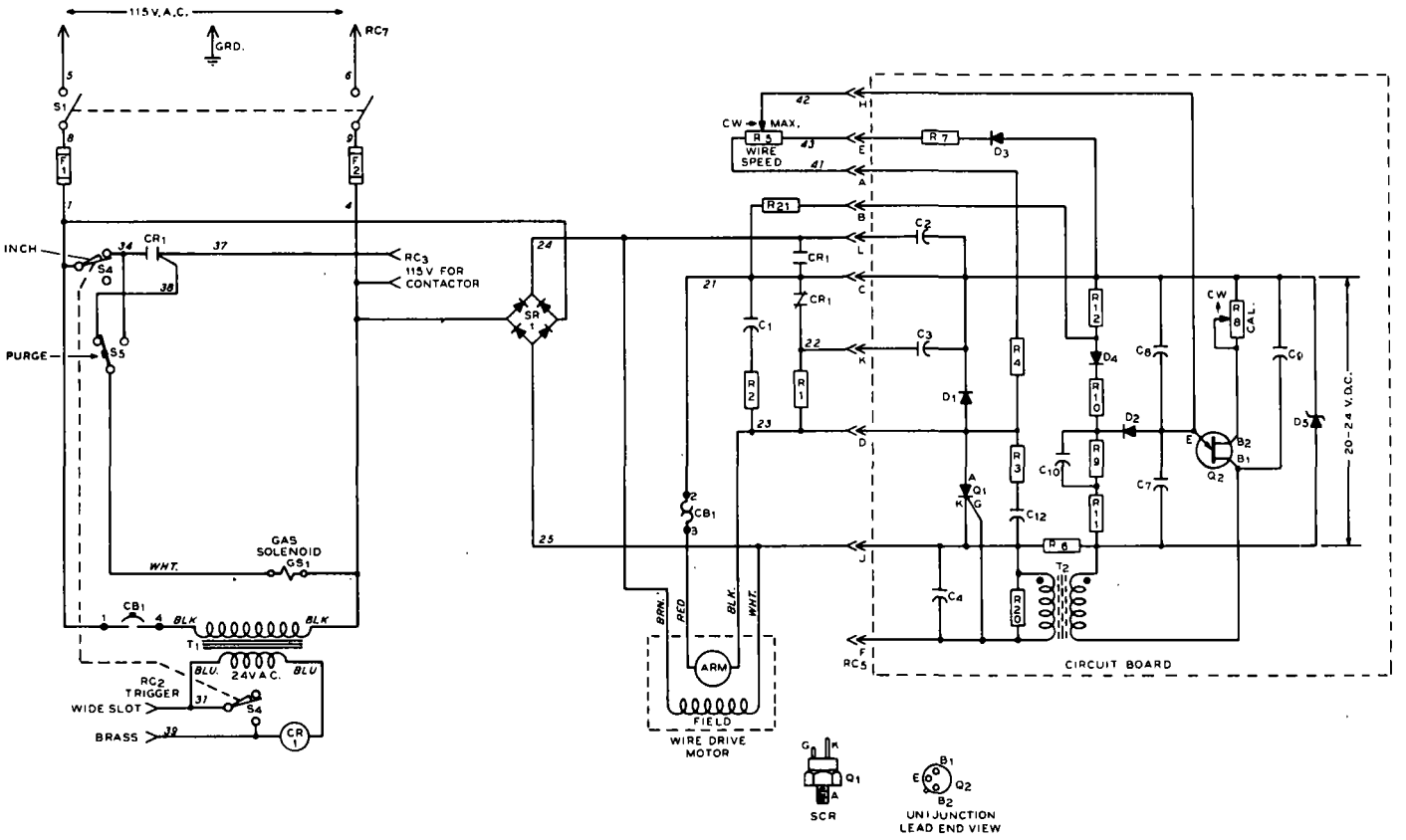
The data collected here, discusses some of the common problems which may occur in this control/feeder.

The assumption of this data is that a proper welding condition has been achieved and has been used until trouble developed. In all cases of equipment malfunction, the manufacturer's recommendations should be strictly adhered to and followed.

If after performing the following procedures the trouble is still not remedied, it is recommended that a servicemen be called.

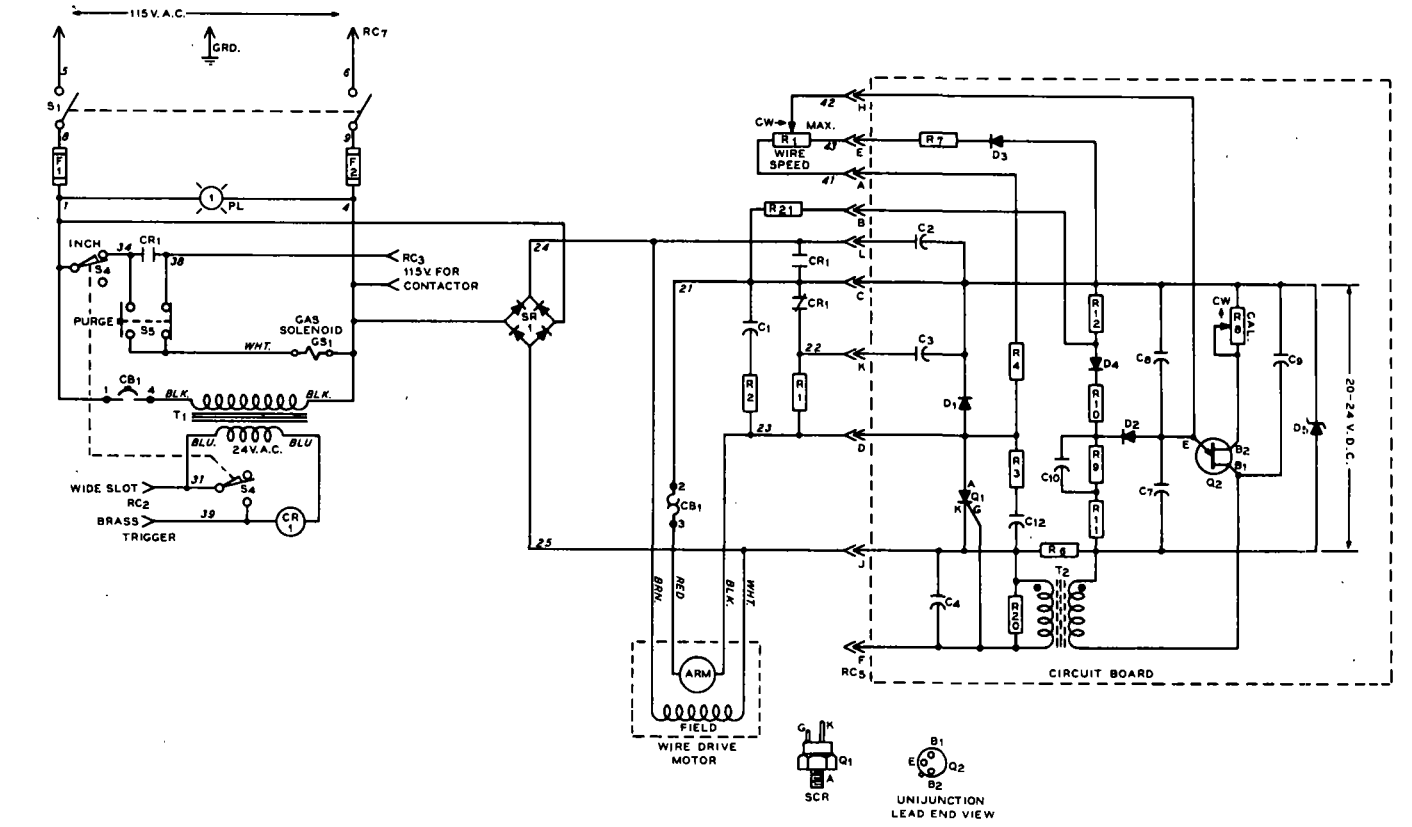
It is recommended that the circuit diagram be used for reference during the troubleshooting.

TROUBLE	PROBABLE CAUSE	REMEDY
Depressing gun switch will not energize control/feeder. Electrode wire is not energized and shielding gas does not flow.	Power Switch in wrong position or defective.	Place switch to On position.
		Replace defective Power Switch.
	Circuit breaker CB1 tripped.	Manually reset circuit breaker by depressing the red button on the front panel of the control/feeder labeled RESET.
	Plug from gun switch is not secure in Switch Control Receptacle on control/feeder.	Insert plug fully into Switch Control Receptacle and rotate plug 1/2 turn clockwise.
	115 volts ac input plug is not secure in receptacle.	Insert plug fully into 115 vac receptacle and rotate plug 1/2 turn clockwise.
	115 volts input fuse(s) F1 or F2 open.	Replace fuse(s).
Wire feeds, shielding gas flows, but electrode wire is not energized.	115 vac Contactor Control plug is not secure in contactor receptacle on welding power source.	Insert plug fully into receptacle and rotate plug 1/2 turn clockwise.
	Contactor Control cable leads not secure on contactor plug terminals.	Secure leads to plug terminals.
	Defect in welding power source.	See troubleshooting section in welding power source instruction manual.
Wire feeds erratically.	Pressure on drive rolls is insufficient.	Rotate pressure adjustment wing nut clockwise in 1/4 turn increments until wire slippage stops.
	Drive roll is too large for wire size being used.	Change to proper size drive roll.
	Worn drive roll.	Replace drive roll.



Circuit Diagram No. CB-057 361-1A

Figure 6-1. Circuit Diagram For 70A Model



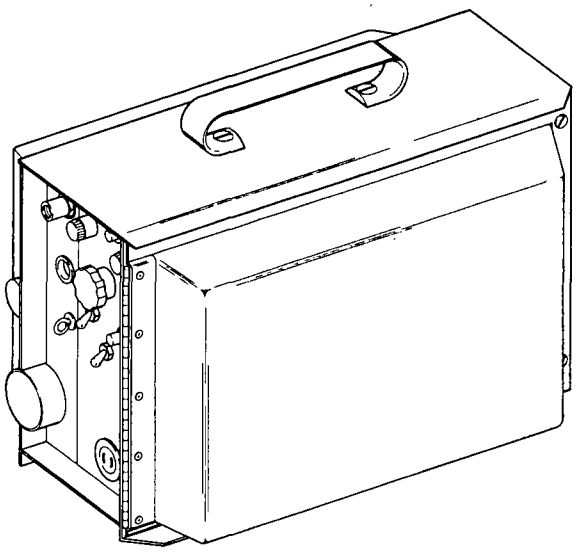
Circuit Diagram No. CB-058 000-1B

Figure 6-2. Circuit Diagram For 80A Model

September 1975 FORM: OM-1038

Effective with Serial No. HF875171

MODEL	STOCK NO.
CONTROL/FEEDER	
MILLERMATIC 70A	
.030 WIRE	057 361
.035 WIRE	057 367
.045 WIRE	057 368
MILLERMATIC 80A	
.030 WIRE	058 000
.035 WIRE	058 001
.045 WIRE	058 002



MODEL/STOCK NO.	SERIAL/STYLE NO.	DATE PURCHASED

PARTS LIST

millerMatic®

MILLER ELECTRIC MFG. CO.
APPLETON, WISCONSIN, USA 54911

NWSA CODE NO. 4579

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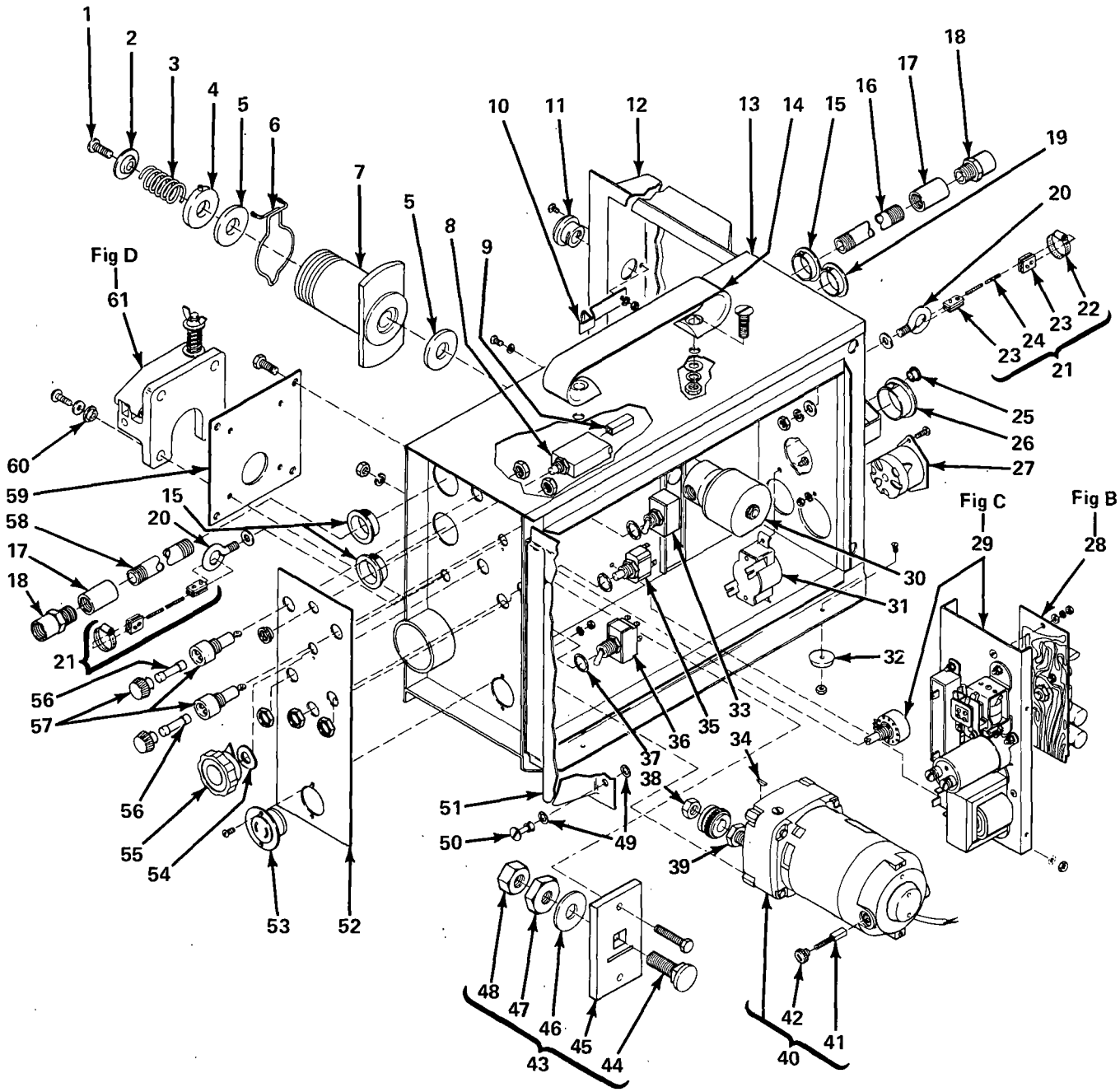

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Figure A – Main Assembly

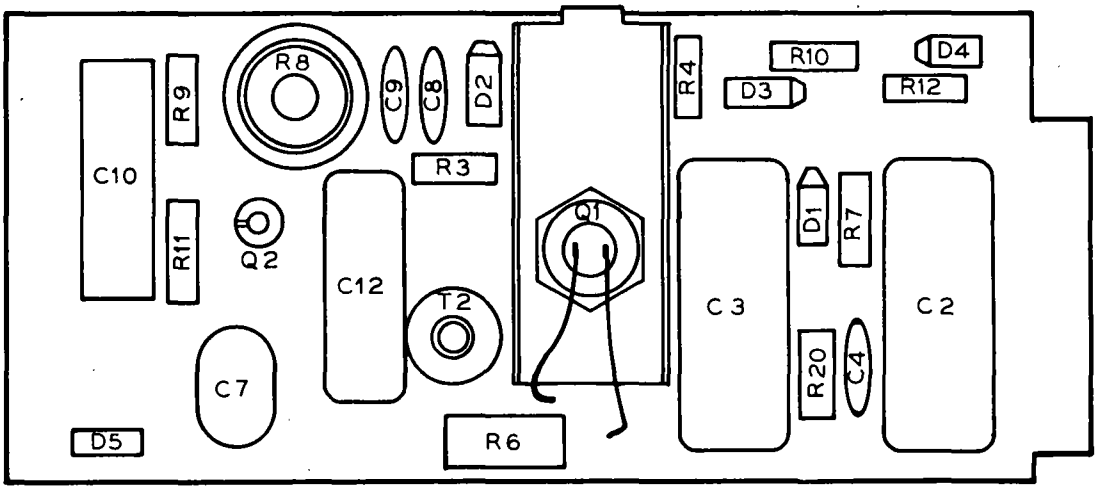
Item No.	Dia. Mkgs.	Factory Part No.	Description	Quantity Model 70A	Quantity Model 80A
Figure A			**Main Assembly**		
1		032 389	SCREW, machine - steel round hd 1/4-20 x 1	1	1
2		057 430	WASHER, centering No. 18	1	1
3		010 233	SPRING, compression	1	1
4		057 971	WASHER, flat - steel keyed 1-1/2 dia	1	1
5		010 191	WASHER, fiber 5/8 ID x 1-1/2 OD x 1/8	2	2
		058 628	WASHER, steel - brake		2
6		057 408	SPRING, retaining	1	
6		058 427	RING, retaining - spool		1
7		057 405	SPINDLE, spool	1	
7		058 428	HUB, spool		1
		057 745	SPRING, compression		1
		601 115	CLIP, jiffy 1/4 inch (attaching hardware A, J & T)		1
8	CB1	*011 002	CIRCUIT BREAKER, manual reset 0.7 amp	1	1
		035 629	O-RING, 3/8 x 1/2 (circuit breaker)	1	1
9		026 837	INSULATOR, terminal - nylon	5	5
10		057 401	CATCH, door (attaching hardware A, J & T)	1	1
11		057 402	BUTTON, door - nylon	1	1
12		057 399	DOOR, side - left hand (attaching hardware W)	1	
12		025 210	DOOR, side - left hand (attaching hardware W)		1
13		057 376	CHASSIS	1	
13		025 197	CHASSIS		1
14		003 795	HANDLE, carrying (attaching hardware H, R, S & V)	1	
14		025 213	HANDLE, carrying		1
		010 911	WASHER, flat - steel standard 5/8 (mounting handle)		1
		057 543	SPRING, compression (mounting handle)		1
		605 369	PIN, spring 1/4 x 1 (mounting handle)		1
15		057 357	BUSHING, snap 15/16 ID 1.12 mounting hole	3	2
16		004 213	NIPPLE, galvanized 1/4 NPT x 8 inches lg	1	1
17		602 934	COUPLING, galvanized 1/4 FPT	2	2
18		010 604	ADAPTER, brass - gas 1/4-18 NPT 5/8-18 female	2	2
		010 603	NIPPLE, brass - ball & barbed stem 1/4	1	1
		010 606	NUT, brass - swivel 5/8-18 right hand	1	1
19		057 358	BUSHING, snap 1 inch ID 1-3/8 mounting hole	1	1
		004 214	BUSHING, snap 1-5/8 ID 2 inch mounting hole		1
20		057 429	BOLT, eye (attaching hardware P, Q & U)	2	2
21		057 331	RELIEF, strain (consisting of)	2	2
22		010 860	. CLAMP, hose 13/16 to 1-3/4 clamp dia	1	1
23		057 318	. CLAMP, tiller line 1/8 to 1/4 cable	2	2
24		057 327	. CABLE	1	1
25		057 359	BLANK, snap-in nylon 3/8 mouting hole	1	1
26		057 360	BLANK, snap-in nylon 1-3/8 mounting hole	1	
27	RC7	056 665	RECEPTACLE, male - flange grounded twistlock 2P3W (attaching hardware A, J & T)	1	1
		056 442	BODY, connector - grounded twistlock 2P3W (RC7)	1	1
28		057 314	CIRCUIT CARD ASSEMBLY (See Fig. B Page 4)(attaching hardware K, M & T)	1	1
29		Figure C	PANEL, control - with components (See Page 5)(attaching hardware A, J & T)	1	1
30	GS1	035 601	VALVE, 115 volts ac 2 way 1/4 IPS port 1/8 orifice (attaching hardware C or D & L) (consisting of)	1	1
		033 050	. COIL	1	1
		025 212	MOUNTING PAD, solenoid		1
31	RC3	039 855	RECEPTACLE, twistlock 2P2W (attaching hardware A)	1	1
		039 618	CAP, twistlock 2P2W (RC3)	1	1
32		025 590	MOUNT, resilient (attaching hardware B)	4	4
33	S4	*011 043	SWITCH, toggle DPDT 6 amp 125 volts	1	1
34		605 136	KEY, woodruff 3/32 x 1/2	1	1
35	S5	*011 232	SWITCH, push button SPDT	1	1
36	S1	*011 020	SWITCH, toggle DPST 6 amp 125 volts	1	1

Item No.	Dia. Mkgs.	Factory Part No.	Description	Quantity Model 70A	80A
Figure A			**Main Assembly (Cont'd)**		
37		602 222	WASHER, lock - steel internal tooth 7/16	3	3
38		057 412	NUT, nylon 7/16-20	1	1
39		057 413	NUT, nylon 1/2-20	1	1
40		026 587	MOTOR, gear 1/20 hp (consisting of)	1	
40		026 586	MOTOR, gear 1/20 hp (consisting of)		1
41		*057 431	. BRUSH & SPRING	2	2
42		057 432	. SCREW, cap - brush holder	2	2
43		057 363	TERMINAL, power output (attaching hardware G, P & U)(consisting of)	1	1
44		038 912	. BOLT, shoulder - round hd sq neck 1/2-13 x 1-11/16	1	1
45		038 885	. TERMINAL BOARD	1	1
46		602 250	. WASHER, flat - steel SAE 3/4	1	1
47		038 913	. NUT, brass - hex special 1/2-13	1	1
48		601 839	. NUT, brass - hex full 1/2-13	1	1
49		602 344	RETAINER, screw	4	4
50		602 341	FASTENER, screw - oval hd No. 5	2	2
		602 347	RECEPTACLE, rivet type - screw 1/4 turn (attaching hardware X)	2	2
51		057 403	DOOR, side - right hand (attaching hardware W)	1	
51		025 209	DOOR, side - right hand (attaching hardware W)		1
52			NAMEPLATE (order by stock, model, and serial numbers)	1	1
53	RC2	039 759	RECEPTACLE, female - flange midget twistlock 2P2W (attaching hardware A, J & T)	1	1
54		010 929	WASHER, flat - steel spring 3/8	1	1
55		019 609	KNOB, pointer	1	1
56	F1,2	*012 618	FUSE, miniature - glass 5 amp	2	2
57		012 617	HOLDER, fuse - miniature	2	2
	PL1	*027 629	BULB, slide base 120 volts		1
		027 639	LENS, red - jeweled		1
		027 631	HOUSING, indicator light		1
58		605 127	NIPPLE, galvanized 1/4 NPT x 4-1/2 inches lg	1	
58		004 213	NIPPLE, galvanized 1/4 NPT x 8 inches lg		1
59		057 410	INSULATOR, motor mount (attaching hardware F)	1	1
60		057 411	BUSHING, nylon - flanged 3-1F	4	4
61		057 892	DRIVE ASSEMBLY, wire (See Fig. D Page 6)(attaching hardware E & N)	1	1
		010 350	WRENCH, hex	1	1
			Attaching Hardware		
A		602 070	SCREW, machine - steel truss hd 6-32 x 3/8	11	11
B		605 472	SCREW, machine - steel flat hd 6-32 x 1/2	4	4
C		602 080	SCREW, machine - steel round hd 8-32 x 3/8	2	
D		602 085	SCREW, machine - steel round hd 8-32 x 3/4		2
E		605 130	SCREW, machine - steel truss hd 10-32 x 1	4	4
F		601 925	SCREW, cap - steel hex hd 1/4-20 x 1/2	4	4
G		601 927	SCREW, cap - steel hex hd 1/4-20 x 3/4	2	2
H		079 241	SCREW, machine - steel flat hd 5/16-18 x 3/4	2	
J		602 199	WASHER, lock - steel external tooth No. 6	9	9
K		602 198	WASHER, lock - steel split No. 6	1	1
L		602 200	WASHER, lock - steel split No. 8	2	2
M		603 586	WASHER, flat - steel SAE No. 6	1	1
N		604 772	WASHER, flat - steel SAE No. 8	4	4
P		602 207	WASHER, lock - steel split 1/4	4	4
Q		602 241	WASHER, flat - steel SAE 1/4	3	3
R		602 211	WASHER, lock - steel split 5/16	2	
S		602 242	WASHER, flat - steel standard 5/16	2	
T		601 859	NUT, steel - hex 6-32	13	13
U		601 865	NUT, steel - hex full 1/4-20	4	4
V		604 537	NUT, steel - hex full 5/16-18	2	
W		601 892	RIVET, blind 1/8 dia 1/4 grip	10	14
X		601 905	RIVET, drive - steel 1/8 dia 7/32 grip	4	4

*Recommended Spare Parts

BE SURE TO PROVIDE STOCK, MODEL, AND SERIAL NUMBERS WHEN ORDERING REPLACEMENT PARTS.

Dia. Mkgs.	Factory Part No.	Description	Quantity
Figure B	**057 314**	**Circuit Card Assembly (See Fig. A Page 4 Item 28)**	
C2,3	031 694	CAPACITOR, mylar 0.47 uf 200 volts dc	2
C4,8,9	031 643	CAPACITOR, ceramic 0.01 uf 500 volts dc	3
C7	031 693	CAPACITOR, mylar 0.33 uf 75 volts dc	1
C10	031 633	CAPACITOR, electrolytic 80 uf 25 volts dc	1
C12	031 721	CAPACITOR, mylar 0.2 uf 200 volts dc	1
D1-4	026 202	DIODE, 1 amp 400 volts straight polarity	4
D5	037 250	DIODE, zener 24 volts 1 watt	1
Q1	037 824	THYRISTOR, 7.4 amp 200 volts	1
	010 915	WASHER, flat - brass 1/4 (mounting Q1)	1
	602 208	WASHER, lock - steel external tooth 1/4 (mounting Q1)	1
	601 867	NUT, steel - hex jam 1/4-20 (mounting Q1)	1
	037 261	HEAT SINK	1
Q2	037 289	TRANSISTOR, unijunction 50MA 35 volts	1
R3	030 937	RESISTOR, carbon 0.5 watt 10 ohm	1
R4	030 854	RESISTOR, carbon 0.5 watt 18K ohm	1
R6	030 945	RESISTOR, carbon 2 watt 4700 ohm	1
R7	030 940	RESISTOR, carbon 0.5 watt 2000 ohm	1
R8	030 944	POTENTIOMETER, WW 1 turn 2 watt 5000 ohm	1
R9	030 936	RESISTOR, carbon 0.5 watt 33K ohm	1
R10	030 853	RESISTOR, carbon 0.5 watt 2200 ohm	1
R11	030 938	RESISTOR, carbon 0.5 watt 1200 ohm	1
R12	030 934	RESISTOR, carbon 0.5 watt 6800 ohm	1
R20	030 090	RESISTOR, carbon 0.5 watt 47 ohm	1
T2	036 143	TRANSFORMER, pulse	1
	602 196	WASHER, lock - steel internal tooth No. 4 (mounting T2)	1
	601 858	NUT, steel - hex 4-40 (mounting T2)	1
	026 750	MOUNTING PAD, semi conductor	1



COMPONENTS TO BE REPLACED BY QUALIFIED PERSONNEL ONLY

TA-057 314

Figure B — Circuit Card Assembly

BE SURE TO PROVIDE STOCK, MODEL, AND SERIAL NUMBERS WHEN ORDERING REPLACEMENT PARTS.

Item No.	Dia. Mkgs.	Factory Part No.	Description	Quantity
Figure C			**Panel, Control - With Components (See Fig. A Page 2 Item 29)**	
71		026 837	INSULATOR, terminal - nylon	3
72	CR1	*034 841	RELAY, 24 volts ac DPDT (attaching hardware BB, FF & JJ)	1
73		004 255	PANEL, mounting - components	1
74		010 301	BUSHING, brass 0.106 ID x 1/4 OD x 5/16 (attaching hardware DD, FF & JJ)	1
75		031 251	BRACKET, mounting - RC5 (attaching hardware KK)	1
76	RC5	039 756	CONNECTOR, edge 10 pin (attaching hardware AA, EE & HH)	1
77		038 784	STRIP, terminal 1 pole	1
78	R21	030 940	RESISTOR, carbon 0.5 watt 2000 ohm	1
79		601 375	RING, mounting - capacitor (attaching hardware BB, FF & JJ)	1
80	C1	*031 698	CAPACITOR, electrolytic 250 uf 175 volts dc	1
81	T1	*036 135	TRANSFORMER, SNC P6930 115/24 volts ac (attaching hardware BB, FF & JJ)	1
82	R1	*030 942	RESISTOR, WW fixed 12 watt 10 ohm (attaching hardware BB, FF & JJ)	1
83	SR1	035 914	RECTIFIER, integrated 25 amp 400 volts (attaching hardware CC, GG & JJ)	1
84	R2	*030 941	RESISTOR, WW fixed 100 watt 5 ohm (attaching hardware BB, FF & JJ)	1
85	R5	*030 943	POTENTIOMETER, carbon 1 turn 2 watt 15K ohm	1
			Attaching Hardware	
AA		604 632	SCREW, machine - steel round hd 4-40 x 1/2	2
BB		602 070	SCREW, machine - steel truss hd 6-32 x 3/8	10
CC		602 072	SCREW, machine - steel truss hd 6-32 x 5/8	1
DD		604 850	SCREW, machine - steel round hd 6-32 x 3/4	1
EE		602 196	WASHER, lock - steel internal tooth No. 4	2
FF		602 199	WASHER, lock - steel external tooth No. 6	11
GG		602 198	WASHER, lock - steel split No. 6	1
HH		601 858	NUT, steel - hex 4-40	2
JJ		601 859	NUT, steel - hex 6-32	12
KK		604 470	RIVET, blind 1/8 dia 1/16 grip	2

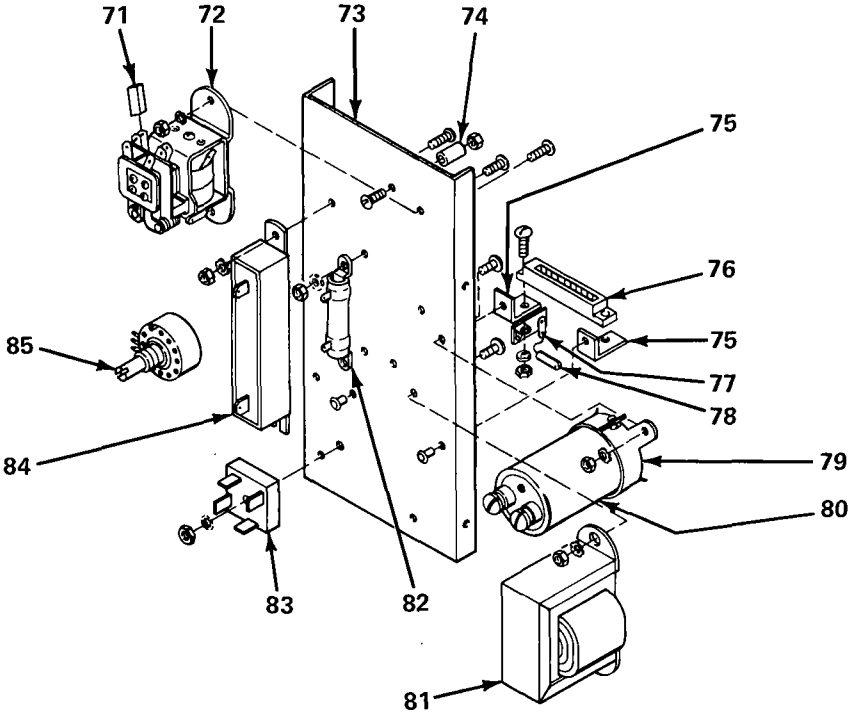


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Figure C — Panel, Control - With Components

*Recommended Spare Parts

BE SURE TO PROVIDE STOCK, MODEL, AND SERIAL NUMBERS WHEN ORDERING REPLACEMENT PARTS.

Item No.	Factory Part No.	Description	Quantity
Figure D	**057 892**	**Drive Assembly, Wire (See Fig. A Page 3 Item 61)**	
101	056 663	PIN, machined	1
102	010 285	SCREW, thumb 1/4-20 x 1/2	1
103	056 164	COVER, gear	1
104	601 888	NUT, steel - wing 5/16-18	1
105	602 242	WASHER, flat - steel standard 5/16	1
106	010 231	SPRING, compression	1
107	010 910	WASHER, flat - steel SAE 3/8	1
108	056 350	FASTENER, pinned	1
109	057 409	HOUSING, drive roll	1
110	604 741	PIN, cotter - hair 0.042 x 15/16	1
111	604 624	SCREW, machine - steel fillister hd 1/4-20 x 1/2	2
112	010 661	PIN, spring 1/8 x 5/8	1

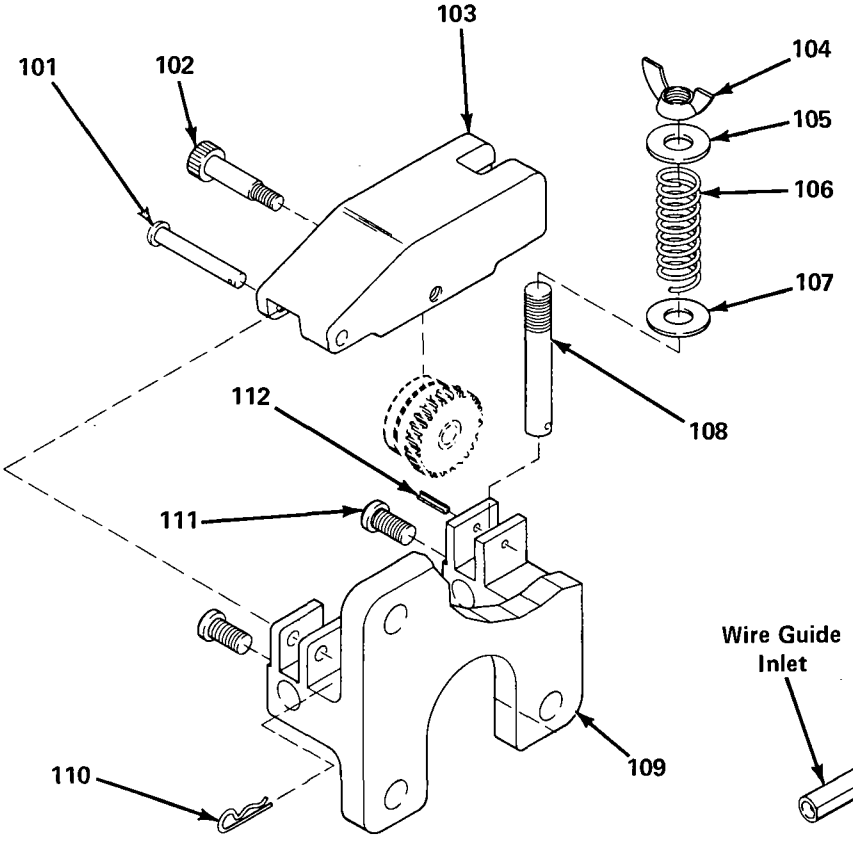

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Figure D — Drive Assembly, Wire

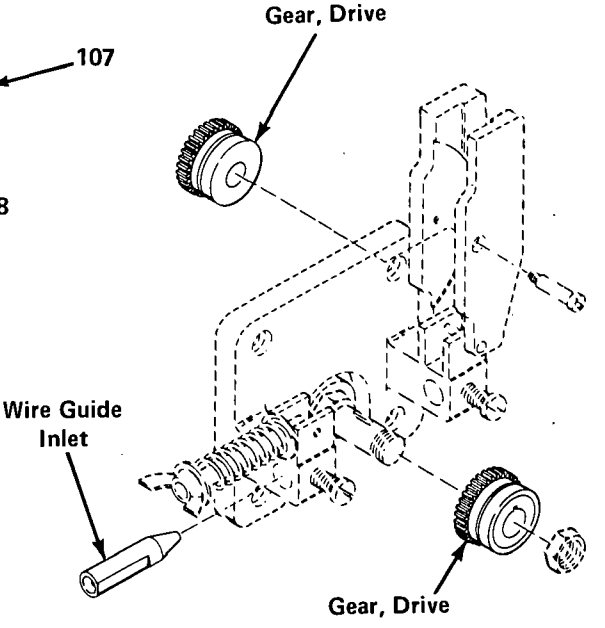

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Figure E — Wire Guide And Drive Gear Assembly

Wire Diameter & Type			Kit No.	Gear, Drive		Wire Guide Nos.
Fraction	Decimal	Metric		Part No.	Type	Inlet
.030" hard	.030	.8MM	057 908	057 775 (Upper) 057 772 (Lower)	V-groove	056 182
.035" hard	.035	.9MM	057 909	057 759 (Upper) 057 762 (Lower)	V-groove	056 182
.045" hard	.045	1.2MM	057 910	057 776 (Upper) 057 771 (Lower)	V-groove	056 184

BE SURE TO PROVIDE STOCK, MODEL, AND SERIAL NUMBERS WHEN ORDERING REPLACEMENT PARTS.